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THE JOB CHARACTERISTICS MODEL: TEST OF A MODIFIED FOUR-TRAIT MODEL AT THE UNIVERSITY OF CENTRAL FLORIDA

BY

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B.A., Florida Memorial College, 1985

THESIS

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of the requirements
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Abstract

This study examined the number of significant factors in the Hackman and Oldham (1980) job characteristics model. The original factors were: Skill Variety, Task Significance, Task Identity, Autonomy, and Feedback. Scores on these dimensions for 84 employees of the University of Central Florida (21 supervisory and 63 non-supervisory subjects) were used as the basis for this study through a mail administration of the Hackman and Oldham Job Diagnostic Survey (JDS) and their Job Rating Form (JRF). It was hypothesized that: (a) only four significant job dimensions would emerge from factor analysis of the data; (b) that the motivating potential ratings from job incumbents would be significantly different from those provided by supervisors; and (c) that these motivating potential scores would be significantly lower than the norm for the job families into which those positions fell. The data failed to lend support to any of the preceeding hypotheses. First, only one significant factor (Skill Variety) was extracted from the non-supervisory data while two factors (Skill Variety and Task Identity) were extracted from the supervisory data.

Second, incumbents' ratings were not significantly different from those of their supervisors and third, the motivating potential scores of incumbents were found to be higher than the norm for most of the job families sampled in the study.

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INTRODUCTION

The goal of increasing employee motivation and job satisfaction has received widespread attention from industrial psychologists. Some have chosen to deal with the problem from the point-of-view of altering workers' attitudes, while others have found it more effective to alter the environmental characteristics with which workers interact (Buchanan, 1979). Those approaches which have dealt with the altering of environmental factors have been termed job design or job redesign strategies. Hackman and Oldham (1980) defined job design as any activity that involves the alteration of specific jobs with the intent of increasing employee motivation, quality of work, and on-the-job productivity.

Jones (1955) said that motivation is how behavior gets started, is energized, is sustained, is directed, is stopped, and what kind of subjective reaction is present in the organism while all this is going on. According to Campbell and Pritchard (1976) motivation has to do with a set of independent/dependent variable relationships that explain the direction, amplitude, and persistence of an individual's behavior, holding constant the effects of

aptitude, skill, understanding of the task, and constraints operating in the environment. The bottom line in all definitions of motivation is that it is a process concerned with: (a) what energizes human behavior; (b) what directs or channels such behavior; and (c) how this behavior is maintained or sustained (Steers and Porter, 1983).

Most psychological theories of motivation are grounded in the early principle of hedonism which states that individuals tend to seek pleasure and avoid pain. However, beginning at the end of the nineteenth century, attempts were first made to empirically define relationships among specific variables which might then be used to predict motivation (Steers and Porter, 1983). It was this movement which lead to the emergence of three specific schools of thought about the nature of human motivation. The three dominant theories are: (a) instinct theories; (b) reinforcement theories; and (c) cognitive theories.

Instinct theorists like William James, Sigmund Freud, and William McDougall showed that unconscious aspects of motivation should play an integral role in attempts to understand motivation. McDougall (1908) defined an instinct as an inherited or inate psychophysical disposition which directs its possessor to perceive, or pay attention to, objects of a certain class, and to experience an emotional excitement of a particular type. James and McDougall

believed that individuals all have instincts (such as love, fear, curiosity, etc.) in varying degrees and, therefore, have an automatic predisposition to behave in certain ways. Freud (1915) however, was the first psychologist to specifically propose the existence of unconscious motivation. The major factor in human motivation was seen by him as resulting from forces unknown to the individual.

Drive (or reinforcement) theories of motivation are based on the notion that decisions concerning present behavior are based upon the consequences of rewards of past actions. When positive consequences result it is more likely that behavior will be repeated. On the other hand, individuals avoid repeating actions which lead to negative consequences. Hull (1943) presented the first formal and empirical statement of drive theory. Drive was defined in that work as an energizing influence which determined the intensity of behavior and which was linearly related to level of deprivation. Modern reinforcement theories, such as postulated by Skinner (1953) emphasize the consequences of behavior. These theories ignore the inner state of the individual and concentrate solely on what happens to the individual as action is initiated. As Hammer and Hammer illustrated in a study published in 1976, reinforcement theories of motivation have been widely and successfully applied to organizations across the United States using

positive reinforcement contingencies. Contingencies of work behavior are of four basic types: positive reinforcement, avoidance learning, extinction, and punishment (Rachlin, 1970). A positive reinforcer is a stimulus which strengthens the probability of a response. Avoidance learning occurs when the presence of a behavior can prevent the onset of a noxious stimulus (Michael and Meyerson, 1962). The decline in response rate as a result of non-rewarded repetition of a task is called extinction. A second method of reducing the frequency of an undesired behavior is punishment which is the presentation of an aversive consequence, contingent upon a response, or removing a positive consequence contingent upon a response. Positive reinforcement strategies are those most commonly used in job settings, as Hammer and Hammer (1976) reported.

Cognitive theories of motivation assume that individuals engage in some form of conscious behavior on the job. People are seen as reasoning, thinking individuals who consider the consequences of their actions. Expectancy/valence cognitive theories of motivation (Vroom, 1964) state that motivation is a combined function of the individual's perception that effort will lead to performance and of the perceived desirability of outcomes that may result from performance. Vroom asserted that job performance is a function of ability and motivation.

Goal-setting cognitive theories of motivation have been most conscientiously defended by Locke (1976), who identifies two cognitive determinants of behavior -- values and intentions. Values, according to Brauden (1966), are that which one regards as conducive to one's welfare. Intentions are synonymous with goals. Goal-setting cognitive theories of motivation have also been widely applied in organizational settings in the United States.

Comprehensive theories of motivation in the workplace address three important sets of variables; (a) individual characteristics, such as interests, attitudes, and needs; (b) job-related characteristics such as types of intrinsic rewards, degree of autonomy, and performance feedback; and (c) environmental characteristics such as organizational actions and social characteristics (Porter and Miles, 1974).

Job-related characteristics have been the variable which most psychologists have chosen to manipulate in their job design efforts. Early managerial approaches to job design (as previously defined), focused on attempts to simplify an employee's required tasks in order to increase production efficiency. This model is best characterized by the work of Frederick W. Taylor (1911) of the scientific management school. His model was based on the assumptions that people: (a) find work to be inherently distasteful; (b) believe that what they do is less important than what

they earn for doing it; and (c) do not want, or cannot handle, work which requires creativity, self-direction, or self-control. The expectations of that model were that people can tolerate work if the pay is decent and the boss is fair and, if tasks are simple enough and people are closely controlled.

The human relations movement was characterized by the work of Mayo (1933, 1945) and Rothlisberger and Dickson (1939) who argued that it was necessary to consider the "whole person" on the job. They laid the foundation for the development of the human relations model which assumed that people want to feel useful and important; that people desire to belong and to be recognized as individuals; and that these needs are more important than money in motivating people to work (Steers and Porter, 1983). The expectations of their model were that: (a) sharing information with subordinates and involving them in routine decisions will satisfy their basic needs to belong and to feel important; (b) satisfying these needs will improve morale and reduce resistance to formal authority; and (c) the presence of the two preceding factors will increase employee motivation.

In the 1960s, the human resources movement became dominant. Its proponents had various titles for their models. Typical of this period were McGregor's Theory Y (1960); Likert's System Four (1967); Schein's Complex Man

(1972); and Miles' Human Resources Model (1965). These models all share the assumptions that work is not inherently distasteful and that most people can exercise more creative self-direction than their present jobs demand. These researchers believe (a) that expanding subordinate influence, self-direction, and self-control, will lead to direct improvements in operating efficiency and (b) that work satisfaction may improve as a by-product of self-direction and self-control. The human resources movement was the birthplace of modern job design techniques.

Hackman and Lee (1979) indicated that there are four current theoretical approaches to job design. The first is activation theory which specifies that a person's level of arousal (motivation) decreases when sensory input is repetitious. Activation theory (Scott, 1960) focuses on the biological processes involved in worker motivation. Activation, defined as the degree of excitation of the brain-stem reticular formation, has been found in laboratory experiments to have a curvilinear relationship to performance. Research has indicated that performance suffers at very low or very high levels of activation. Therefore, jobs may be modified to produce moderate levels of activation with a resulting increasing in performance. Motivation-hygiene theory, as proposed by Herzberg, Mausner, and Snyderman (1959), postulates that factors intrinsic to

work itself determine how satisfied workers will be with their jobs. According to Herzberg et al., a job will be satisfying to workers only if motivators are built into it. Herzberg differentiated between job enlargement and job enrichment strategies. Job enlargement refers to a horizontal expansion of an employee's job, giving the job more of the same kinds of activities but not altering the skills necessary to perform the job. Job enrichment refers to a vertical expansion of a job, requiring an increase or change in required job skills (Paul et al., 1969). The third theoretical approach to job design which has been frequently utilized is sociotechnical systems theory, which emphasizes the need to design work systems in which the social and technical aspects of the work are integrated. Trist and Davis (1963) suggest that it is necessary to consider the psychological requirements of tasks in order to make them more motivating. These principles include the need for a job to provide: (a) reasonably demanding content; (b) an opportunity to learn; (c) some degree of autonomy or discretion in decisions affecting one's job; (d) social support and recognition; and (e) a feeling that one's job leads to a desirable future. The last theory of job design which has been widely tested is the job characteristics model. This theory proposes that individual differences in the desire for personal growth and

development determine individual job performance, and thereby, levels of motivation and satisfaction (Hackman and Oldham, 1980).

Hackman, Oldham, Jason, and Purdy (1974) postulated, in work preceding the formal statement of the job characteristics model, that internal motivation and ultimately employee satisfaction, will occur when persons: (a) have knowledge of the results of their work; (b) believe they are personally accountable for the outcomes of their efforts; and (c) perceive their work as being worthwhile, according to their own value systems. The presence of these three psychological states, Hackman et al. believed, was a prerequisite for the development of internal motivation. The more these three conditions are present, the more people will feel good about themselves when they perform well.

These researchers went further in their work by identifying five core characteristics of jobs which are likely to elicit the three psychological states previously mentioned. These five core characteristics are: (a) skill variety -- the degree to which a job requires the worker to perform activities that challenge his/her skills and abilities; (b) task identity -- the degree to which the job requires completion of a whole and identifiable piece of work; (c) task significance -- the degree to which the job

has a substantial and perceivable impact on the lives of other people, whether in the immediate organization or the world at large; (d) autonomy -- the degree to which a job gives the worker freedom, independence, and discretion in scheduling work and determining how it should be done; and (e) feedback -- the degree to which a worker, in carrying out work activities, gets information about the effectiveness of his/her efforts. Combining scores of a job on these five dimensions provides a single index reflecting the overall potential of a job to prompt self-generated work motivation in job incumbents. Scores on the five dimensions are combined as follows:

Motivating Potential Scores (MPS) were derived by adding each subjects' score on the Skill Variety, Task Identity, and Task Significance dimensions. The score so derived was then multiplied by the Autonomy score. Then, the score obtained from the preceeding step was multiplied by the Feedback score. The final score was then divided by three.

The five core dimensions are directly tied to a set of principles for redesigning jobs (Hackman et al., 1975). These principles specify what types of changes in jobs are most likely to lead to improvements in each of the five core job dimensions, and ultimately, to an increase in the motivating potential of a job. The five implementing concepts are: (a) forming natural work units; (b)

combining tasks; (c) establishing client relationships; (d) vertical loading; and (e) opening feedback channels.

Forming natural work units refers to distributing work in a logical way in order to increase job-holder motivation. The principle underlying natural units of work is "ownership" -- a worker's sense of continuing responsibility for an identifiable body of work. Identifying basic tasks and grouping the items in natural categories are the two steps involved in creating natural work units. The second implementing concept, that of combining tasks, suggests that whenever possible, existing fractionalized tasks should be put together to form larger modules of work.

Establishing client relationships is a three-step process involving the identification of the client, establishing direct contact between the worker and the client, and establishing criteria by which the client can judge the quality of the product or service he/she receives. The implementing concept of vertical loading is aimed at closing the gap between the doing and the controlling parts of the job. The vertically loaded job has responsibilities and controls that were formerly reserved for higher levels of management, including discretion in setting schedules, deciding on work methods, checking on quality, and helping less experienced workers. Opening feedback channels should be aimed at allowing the worker to learn about his/her

performance directly as the job is being done, rather than from management on an occasional basis.

Hackman and Oldham (1975) have also provided a technology for use in the diagnosis of jobs prior to their redesign and for use in research aimed at measuring the effects of redesigned jobs on the incumbents. The technology is comprised of two measurement scales. The Job Diagnostic Survey (JDS) is an eight-section self-report questionnaire which is used to solicit the cognitions of the job incumbent along the five job dimensions. In addition, it also provides supplementary measures of respondents' reactions to their work. The JDS provides data on: (a) the overall level of motivation and satisfaction of employees on the focal job; (b) the overall motivating potential of existing jobs, and how specific actions of the job contribute to the obtained motivating potential score; and (c) the "readiness" of employees for change.

The JDS has been found to demonstrate internal consistency reliabilities ranging from a high of .88 (growth need strength) to a low of .56 (social satisfaction), according to Hackman and Oldham (1974). The authors also reported that the variables measured by the JDS relate to one another (and to external criterion variables) generally as predicted by the theory on which the instrument is based. The cognitions of supervisors regarding the focal job are

assessed by means of the Job Rating Form (JRF), which is similar to the JDS except that none of the scales measuring affective reactions to the job or work are included. The JRF permits direct quantitative comparisons to be made between assessments made of job characteristics by the people who do the job, by their supervisors, and by outside observers.

The job characteristics model, despite its widespread use, has been criticized in some areas. One of these points of contention is whether the task significance dimension accounts for enough variance to be considered a separate dimension. In the original formulations of the model, there was no task significance dimension (Birnham et al., 1986) but it was eventually included in subsequent publications (Hackman and Oldham, 1980). However, some researchers, including Stone and Porter (1975, 1979), have successfully excluded this dimension from their work. Birnham, Farh, and Wong (1986) were the most recent researchers to have explored the application of the four-trait versus the five-trait model to research data provided from administration of the JDS and JRF. They determined that:

> A confirmatory factor analysis of the five-trait, two-method (JDS and JRF) model resulted in an improper solution, indicated by negative error variance estimates for two of the ten measures. The negative error

> variances gave a strong indication that the model may not fit the data . . .Further data analysis focused on the four-trait, two-method model . . . confirmatory factor analysis of the four-trait, two-method model resulted in a chi-square value of 7.49 with six degrees of freedom (p .28) . . . This finding coupled with the insignificant chi-square test of the overall goodness of fit suggests that the model represents a reasonable fit for the data.

They found that when they excluded the task significance dimension, they were able to observe a better fit between their data on the multitrait/multimethod (two methods -- JDS and JRF; multi-trait = Hackman and Oldham's, 1975, 1976, 1980, core job dimensions) model. Their research was conducted in Hong Kong and therefore the results cannot be readily generalized to situations in the United States.

Another issue regarding this job characteristics model which has been often debated by researchers (Birnbaum et al., 1986), is its failure to distinguish objective job characteristics from job incumbents' cognitions about these characteristics. Birnbaum et al. (1986) attempted to solve this problem by more clearly identifying the relationship between the cognitions of incumbents versus the cognitions of those who supervise those focal jobs. Using a multi-trait/multi-method approach, they found that supervisory ratings of job characteristics had more trait variance and less method variance than the ratings provided

by job incumbents. They interpreted this to mean that, when asked to rate a set of characteristics, supervisors were able to distinguish these dimensions more objectively than do the job incumbents.

The current research sought to replicate the portions of the Birnbaum et al. study which related to: (a) the discrete factors which the Hackman and Oldham scales measure; and (b) a comparison of the relative accuracy of the JDS versus the JRF for measuring the motivating potential of jobs.

Hypothesis 1 -- It was hypothesized that only four traits from the existing Hackman and Oldham model would be found to be significant as determined by factor analytic techniques. It was anticipated that the task significance trait would be found to overlap with at least one other variable such that it contributed no unique variance to the model.

Hypothesis 2 -- It was hypothesized that there would be a significant difference between supervisory and non-supervisory subjects on their assessments of all jobs across all job dimensions. A pattern would be observed from analysis such that the mean difference between specific variables for the two groups would be significantly different.

Hypothesis 3 -- Hackman and Oldham (1980) provided a listing of normative MPS scores for nine job groups. The positions reviewed in this study fall into four of these job families. It is therefore hypothesized that JDS MPS scores for each job family in the current study would be significantly lower than those provided in the normative data based on the researcher's knowledge of the job climate in the organization in which the research was being conducted.

METHOD

Subjects

Subjects for the study were all non-instructional, full-time employees at the University of Central Florida. A total of 84 subjects participated in the study. Of those, twenty-one (32%) were supervisors and the remaining sixty-three (68%) were non-supervisory subjects. The majority of all respondents were males. Specifically, thirty-four (54%) of the JDS respondents and n=11 (52%) of the JRF respondents were male. Most study participants n=58 (92%) of the JDS respondents and n=19 (90%) of the JRF respondents were Caucasian. In the case of the JDS respondents, the remaining five subjects were Hispanic, while the remaining two JRF respondents were Black. The modal age range of the JDS respondents was approximately ten years below that of the JRF respondents. Specifically, 31 (49%) of the JDS respondents were aged between 30 and 39 years. By contrast, the modal age range of the JRF respondents was 40 to 49 years.

Supervisory subjects (those who completed the JRF) were selected from the population (n=31) of all classes which

included the words "supervisor" or "superintendent" in their official job titles. In the State University System of Florida (of which the University of Central Florida is a part), supervisory class titles are designated only for positions which supervise three or more persons in the same job class. For example, Computer Programmer/Analyst Supervisors supervise only Programmer/Analysts. Persons who were working in such supervisory positions were identified by consulting a master schedule in the University Personnel Services office. This roster identified employees by job class and by name.

Each supervisor so identified was assigned a code and all positions which that person supervised were assigned a code which was a subset of the supervisor's code. For example, the number "3" might be assigned to the supervisor and its three subordinate positions might be assigned as codes "3-01, 3-02, and 3-03." These codes were written into the JDS and JRF forms in the upper right-hand corner of the cover page. This coding system facilitated comparisons between supervisor and subordinate ratings of the motivating potential of their jobs and also was an aid to anonymity and confidentiality.

Procedure

During the week of May 18 to May 22, 1987, a large manila envelope was mailed to each prospective supervisory subject through the UCF internal mail system. Each envelope contained one copy of the JRF (which the supervisors were asked to complete) and three copies of the JDS which the supervisor was asked to distribute to three of his/her subordinate positions. A written statement of the goals of the study (see Appendix A) and instructions for completing the questionnaires were also included for each subject.

Confidentiality was facilitated by asking both the JDS and the JRF respondents to mail their completed questionnaires directly to the researcher in sealed envelopes. A written guarantee of confidentiality and anonymity was also included. Additionally, subjects were given the opportunity to decline participation and to request the study results by indicating their desire in a space provided on the "Statement of Purpose" form. Only ten percent (n=8) of the subjects made this request.

Twenty-one (68%) of the 31 supervisors who were asked to participate did so. Seven declined participation, while the completed questionnaires for three had to be thrown out because they were incorrectly completed.

The initial return rate for the questionnaires was approximately thirty percent for the JRF respondents and forty-two percent for the JDS respondents. During the week of May 25 to 29, 1987, a telephone follow-up was conducted by the researcher in which all 31 prospective supervisory participants were called. The researcher reminded them of the goal of the study, thanked them for their assistance, and reminded them to return their completed questionnaires as soon as possible. They were also asked to remind their subordinates to do the same. The final cut-off date for acceptance of completed questionnaires was then set at June 5, 1987. This follow-up increased the return rate to approximately seventy-seven percent for both groups.

Apparatus

The Job Diagnostic Survey (JDS)

The JDS is described below and is attached in Appendix B. The JDS was developed by Hackman and Oldham in 1974 and is used to assess the motivating potential of jobs, as measured by the job incumbent. The questionnaire is divided into eight sections, each with a varying number of items. The total number of items in the JDS is eighty-seven. In Section One, each of the job dimensions is measured by a

single question. In addition, measures are obtained for "Feedback from Agents" and "Dealing with Others." Respondents circle the number which corresponds with their assessment of the amount of the particular job dimension which is present in their jobs. In Section Two, fourteen items solicit responses on each of the seven dimensions mentioned above. There are, therefore, two questions which refer to each of the job dimensions. One question is phrased in negative terms. Respondents are asked to indicate how accurate or inaccurate the statements are that are listed in each item by writing a number (from one to seven) in the blank beside each statement. In sections Three and Five, respondents indicate how they feel about their jobs in terms of its meaningfulness and the responsibility which they experience for the work outcomes. In Section Three, which is comprised of fifteen items, a seven-point scale is used to identify how respondents personally feel about their jobs. A seven-point scale is also used in Section Five where persons are asked to assess how other persons who perform the same job feel about the job. Section Four measures the degree of satisfaction which the respondent feels about specific aspects of the job. The growth need strength of the respondent is measured in sections Six and Seven. In Section Six, respondents are asked to indicate "the degree to which (they) would like to

have each characteristic present in (their) jobs." The eleven items refer to generally desirable aspects of the workplace and a seven-point scale is used which ranges from "would like having this only a moderate amount" to "would like having this extremely much." Section Seven measured growth need strength by asking respondents to indicate their relative preferences for pairs of hypothetical jobs. Using a five-point scale, respondents circle the number which best represents their preferences between two jobs. Section Eight solicits brief biographical data including the sex, age, education, race, and job of the respondent.

The Job Rating Form (JRF)

The JRF is designed to obtain assessments of job dimensions by supervisors or other persons who do not actually perform the job. The JRF is identical to sections One and Two of the JDS except for the instructions.

The JRF is comprised of seven items in Section One and fourteen items in Section Two. These twenty-one items elicit objective descriptions of the job characteristics. Section Three solicits biographical information on age, sex, race, number of persons supervised, job title, and length of time in present job.

The JRF is reproduced in Appendix C.

Statistical Treatment of the Data

Data from the completed questionnaires were coded and entered to a data disk for analysis by the Statistical Package for the Social Sciences (SPSS).

Hypothesis One

The first step in the factor analysis process was the computation of the correlation matrix. Correlation analyses were conducted using Pearson product-moment correlation techniques. These analyses were conducted first on all subjects together and then the data were separated according to whether the subject was a supervisor or a subordinate. These two separate groups of data were then subjected to correlational analyses. Next, the initial factors making up the model were extracted and, finally, the data were rotated to identify the terminal factors.

Computation of the Correlation Matrix

The linear relationship between each of the five variables (job dimensions) was measured by means of the Pearson Correlation coefficient. The analysis was of the

R-type which is based on correlations between variables as opposed to units. According to Gorsuch (1974):

> Whether (the) Q-technique (between each pair of individuals) or R-technique should be used depends upon where the theoretical interest lies. If the concern is with the similarity of variables, then the R-technique is appropriate. If the concern is with developing a typology, then the Q-technique will need to be explored.

Extraction of the Initial Factors

Principle-components analysis in which new variables are defined as exact mathematical transformations of the original data was used in this step. This technique, according to Jae-On-Kim (1978), simply transforms a given set of variables into a new set of composite variables (principle components) which are uncorrelated (orthogonal) to each other. The principle factors are extracted from the correlation matrix with unities as diagonal elements. According to Jae-On-Kim (1978), "the best linear combination of variables . . . is identified in terms that the particular combination of variables would account for more of the variance in the data as a whole than would any other linear combination of variables." The first principle-component therefore, may be viewed as the single best summary of the linear relationships exhibited in the data. The second component is defined as the second best

linear combination of variables, under the condition that the second component is orthogonal to the first. To be orthogonal to the first component, the second one must account for the proportion of the variance not accounted for by the first one. Subsequent components are defined similarly until all the variance in the data is exhausted.

In addition to the orthogonal rotation, initial factors were also analyzed using oblique rotation. In oblique rotation, the orthogonality requirement is relaxed. Instead, the initial axes rotate freely to best summarize any clustering of variables. In both cases, the number of hypothesized factors (4) was predesignated for the analysis. In addition, another factor analysis was conducted in which the five initial factors were used as the rotation criterion. The final extraction analysis was conducted with no quantative criterion.

Rotation of Factors into Terminal Factors

There are many statistically equivalent ways to define the underlying dimensions of the same set of data. For the purposes of this study, both orthogonal and oblique rotational methods were selected in order to simplify the factor structure (Jae-On-Kim, 1975). The goal of orthogonal rotation is to make as many values as possible in each row

of the factor matrix close to zero while also making as many values as possible in each column of the factor matrix close to zero. The orthogonal methods selected for this purpose were quartimax and varimax rotation. Varimax rotation, according to Gorsuch (1974), focuses on simplifying the columns of a factor matrix. Varimax rotation techniques were introduced by Kaiser (1958) as a means to simplify a factor rather than a particular variable.

Quartimax rotation is designed with the goal of making the complexity of a variable a minimum. Quartimax rotates the initial factors in such a way that a variable loads high on one factor but almost zero on all others.

Hypothesis Two

Pearson Product-moment correlation techniques were used to identify the degree of linear relationships between a combination of all scores on the JDS versus all scores on the JRF. In addition, the relationships between subordinate and supervisory subjects were assessed according to job family. After calculating the correlations for this data, F-tests of significance were performed.

Hypothesis Three

Scores for JDS respondents for each job were combined and a mean of these scores was derived. Jobs were then assigned to one of the nine Hackman and Oldham job families. The normative MPS data for these job families were obtained from the Hackman and Oldham chart (see Appendix D). Mean MPS scores from the current study were expressed as a percentage of the norm MPS score to provide an estimate of the degree to which these scores were reflective of the norm data. The resulting data were subjected to the Wilcoxon Signed Ranks Test.

RESULTS

The data obtained from administration of the JDS and JRF were coded and entered into a data file for analysis by the Statistical Package for the Social Sciences (SPSS). Each record was coded along nine variables: skill variety, task identity, task significance, autonomy, feedback, motivating potential score, sex, age, and status as either a supervisory or a non-supervisory subject.

Descriptive Results

The JDS and JRF questionnaires were scored utilizing directions provided by Hackman and Oldham. From the biographical data section age, sex, and ethnic background were derived for all eighty-four subjects. The mean and standard deviation for these three demographic variables and for the five job dimensions are provided in Table 1. Tables 2 and 3 provide means and standard deviations for all variables when subjects are separated according to supervisory status.

To determine if there were any significant differences in MPS due to status as a supervisor or as a subordinate, an

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR
ALL VARIABLES (N = 84)

VARIABLE	MEANS	S.D.
SKILL VARIETY	4.851	.864
TASK IDENTITY	5.037	1.141
TASK SİGNIFICANCE	5.269	1.107
AUTONOMY	4.986	.905
FEEDBACK	4.915	.905
MPS	129.106	49.102

Note: MPS = Motivating Potential Score

TABLE 2

MEANS AND STANDARD DEVIATIONS FOR
SUPERVISORY SUBJECTS (N = 21)

VARIABLE	MEANS	S.D.
SKILL VARIETY	4.885	.792
TASK IDENTITY	4.938	1.386
TASK SIGNIFICANCE	5.181	1.236
AUTONOMY	4.662	.947
FEEDBACK	4.980	.933
MPS	124.752	52.06

Note: MPS = Motivating Potential Score

TABLE 3

MEANS AND STANDARD DEVIATIONS FOR
NON-SUPERVISORY SUBJECTS (N = 63)

VARIABLE	MEANS	S.D.
SKILL VARIETY	4.840	.892
TASK IDENTITY	5.070	1.057
TASK SIGNIFICANCE	5.298	1.070
AUTONOMY	5.098	.872
FEEDBACK	4.893	.902
MPS	130.557	48.424

Note: MPS = Motivating Potential Score

F-test was run on the mean variable ratings for one group versus the other across job families. The mean MPS for supervisory subjects is $\bar{X}$=124.75 and the MPS standard deviation is equal to 52.06. The mean MPS and MPS standard deviation for non-supervisory subjects are 130.56 and 48.42, respectively. This difference is not significant (F=1.16, p=.64). There was no significant difference between supervisor and incumbent ratings of jobs on MPS.

To determine if there was any significant relationship (overlap) between any of the five original job dimensions (and MPS), Pearson's correlation coefficients were derived for three sets of data: (a) all subjects (n=84), as shown in Table 4; (b) supervisory subjects (n=21), as shown in Table 5; and (c) non-supervisory subjects, as shown in Table 6 (n=63).

This output suggested that for all subjects, some variables were moderately related to each other statistically. However, the degree of practical relationship is small as demonstrated by the alpha criterion of less than .05. The relationship between the skill variety and the task identity dimensions (r=.48) was the highest correlation coefficient observed in this matrix. For the supervisory subjects, a moderate degree of overlap was observed between four pairs of variables: autonomy and task identity (r=-.58); task identity and feedback (r=.67);

TABLE 4

INTERCORRELATION FOR FIVE
JOB DIMENSIONS (ALL SUBJECTS)

	SKILL VARIETY	TASK IDENTITY	TASK SIGNIFICANCE	AUTONOMY	FEEDBACK
SKILL VARIETY	1.00 (84) P = .00				
TASK IDENTITY	.48* (84) P = .00	1.00 (84) P = .00			
TASK SIGNIFICANCE	.43* (84) P = .00	.09 (84) P = .42	1.00 (84) P = .00		
AUTONOMY	.30* (84) P = .01	.39* (84) P = .00	.30* (84) P = .01	1.00 (84) P = .00	
FEEDBACK	.28* (84) P = .01	.44* (84) P = .00	.20* (84) P = .07	.46 (84) P = .00	1.00 (84) P = .00

* p = less than .05

TABLE 5

INTERCORRELATION FOR FIVE
JOB DIMENSIONS (SUPERVISORY SUBJECTS)

	SKILL VARIETY	TASK IDENTITY	TASK SIGNIFICANCE	AUTONOMY	FEEDBACK
SKILL VAREITY	1.00 (21) P = .00				
TASK IDENTITY	.24 (21) P = .30	1.00 (21) P = .00			
TASK SIGNIFICANCE	.28 (21) P = .22	-.39 (21) P = .09	1.00 (21) P = .00		
AUTONOMY	.23 (21) P = .33	.58* (21) P = .01	-.06 (21) P = .78	1.00 (21) P = .01	
FEEDBACK	.48* (21) P = .03	.67* (21) P = .00	-.05 (21) P = .82	.60* (21) P = .00	1.00 (21) P = .00

* p = less than .05

TABLE 6

INTERCORRELATION FOR FIVE
JOB DIMENSIONS (NON-SUPERVISORY SUBJECTS)

	SKILL VARIETY	TASK IDENTITY	TASK SIGNIFICANCE	AUTONOMY	FEEDBACK
SKILL VAREITY	1.00 (63) P = .00				
TASK IDENTITY	.58* (63) P = .00	1.00 (63) P = .00			
TASK SIGNIFICANCE	.49* (63) P = .00	.32* (63) P = .01	1.00 (21) P = .00		
AUTONOMY	.33* (63) P = .01	.30* (63) P = .02	.44* (63) P = .00	1.00 (63) P = .00	
FEEDBACK	.22* (63) P = .01	.35* (63) P = .01	.30* (63) P = .02	.44* (63) P = .00	1.00 (63) P = .00

* p = less than .05

between skill variety and feedback (r=.48), and autonomy and feedback (r=.60). When the correlation matrix for the non-supervisory subjects was examined, only a moderate degree of relationship among any of the variables was observed. The highest correlation observed in this matrix was that of the relationship between skill variety and task identity (r=.58). This output suggested that there was hope that with seemingly independent (orthogonal) variables, most of the variables would be extracted as principal factors in subsequent analyses.

Inferential Results

Hypothesis One

This hypothesis states that a pattern would emerge from factor analysis such that the number of significant traits (job dimensions) which would be extracted would be equal to four. For the first analysis which was conducted, data for all subjects on the five job dimensions were examined. Using principal-components analysis initial factor loading were ordered by magnitude of eigenvalues. A significance criterion or eigen less than or equal to 1.00 was preset. Table 7 summarizes the output. This table suggests that the skill variety dimension accounts for almost half the

TABLE 7

INITIAL EIGENVALUES AND PERCENTAGES
OF VARIANCE FOR ALL SUBJECTS (N = 84)

VARIABLE	FACTOR	EIGENVALUES	PCT. OF VARIANCE	CUM/ PCT.
SKILL VARIETY	1	2.358*	47.2	47.2
TASK IDENTITY	2	.990	19.8	67.0
TASK SIGNIFICANCE	3	.772	15.4	82.4
AUTONOMY	4	.520	10.4	92.8
FEEDBACK	5	.360	7.2	100.0

* = p less than or equal to .05

variance. Figure 1 (a scree plot) further illustrates this findings by highlighting the large space between skill variety and the other variables which tend to cluster together. The only factor to be extracted by this analysis was, therefore, the skill variety dimension. Table 8 provides the sorted factor loading matrix. The preceding analysis offered no support for Hypothesis One since fewer than the anticipated number of factors (four) was extracted.

Although Hypothesis One was not supported at this point, further analysis was warranted to identify any differences in factor structure which might exist within the supervisory and non-supervisory groups. Accordingly, principle-components analysis was conducted on the non-supervisory and supervisory data separately. Tables 9 and 10 provide the initial statistical output from this procedure.

As Table 9 indicates, the skill variety factor continued to account for a majority of total variance (50.2%) and was the only dimension with an eigenvalue greater than 1.00. A scree plot of variables in rotated factor space (Figure 2) indicated (as in the first analysis) that the skill variety factor stood out from the other four. These remaining four, which together accounted for only 49.8% of total variance, were clustered together at the lower end of the eigenvalue axis of the scree plot. The

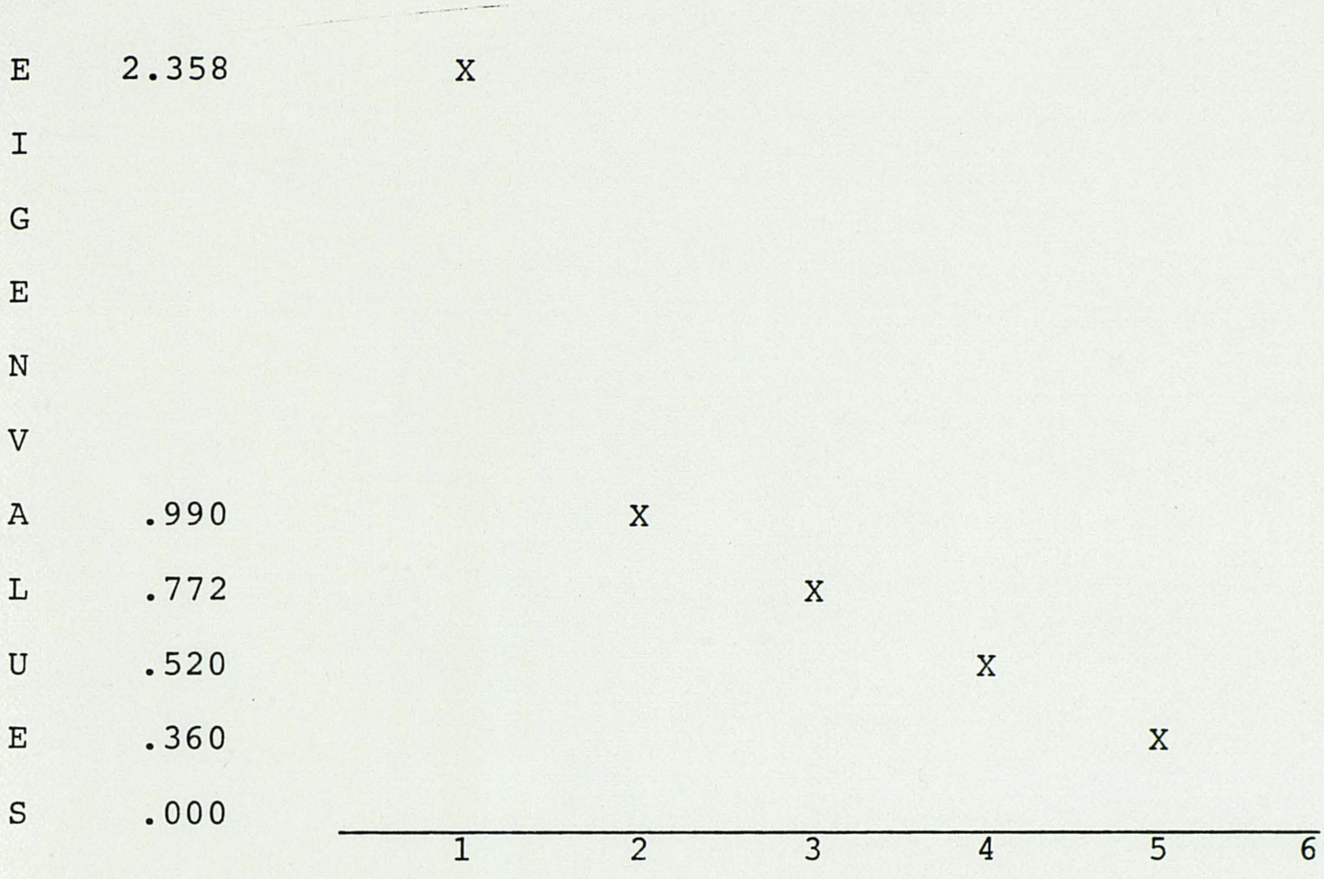

Figure 1. Scree Plot of Variables in Rotated Factor Space for all Subjects.

TABLE 8

SORTED FACTOR MATRIX FOR ALL SUBJECTS (N = 84)

VARIABLE	FACTOR 1
SKILL VARIETY	.724
TASK IDENTITY	.723
TASK SIGNIFICANCE	.721
AUTONOMY	.707
FEEDBACK	.539

TABLE 9

INITIAL EIGENVALUES AND PERCENTAGES OF VARIANCE FOR NON-SUPERVISORY SUBJECTS (N = 63)

VARIABLE	FACTOR	EIGENVALUE	PCT. OF VARIANCE	CUM/ PCT.
SKILL VARIETY	1	2.509*	50.2	50.2
TASK IDENTITY	2	.913	18.3	68.4
TASK SIGNIFICANCE	3	.729	14.6	83.0
AUTONOMY	4	.500	10.0	93.0
FEEDBACK	5	.350	7.0	100.0

* = p less than or equal to .05

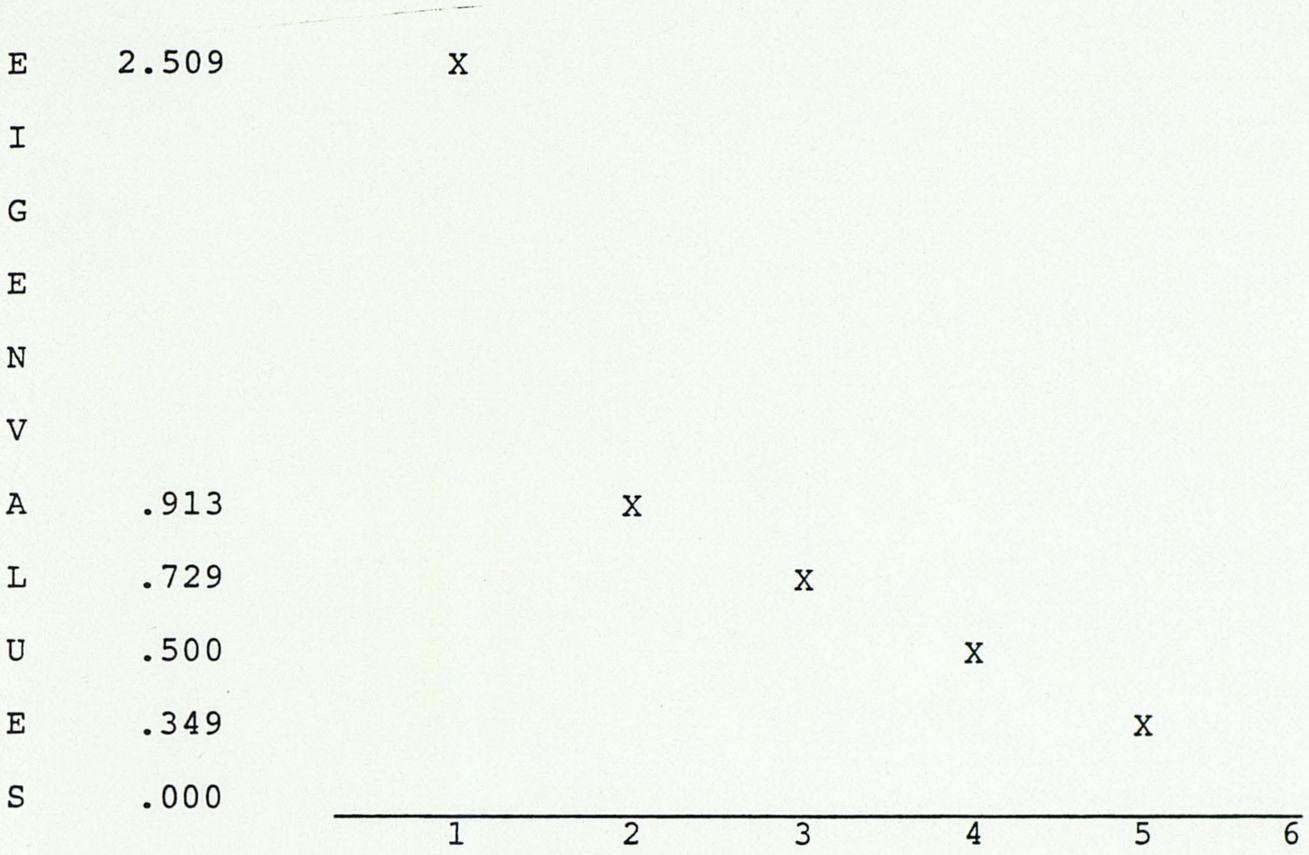

Figure 2. Scree Plot of Variables in Rotated Factor Space for Non-supervisory Subjects.

sorted factor matrix (Table 10) further reinforces this conclusion.

The factor analysis of the supervisory data provided significantly different results from the two preceding analyses. The initial statistics output (see Table 11) showed that together the skill variety and the task identity factors accounted for over 76% of total variance.

The sorted factor matrix (Table 12), shows that four of the variables load positively upon Factor 1 (skill variety). These variables which have positive loadings on Factor 1 are: feedback, task identity, skill variety, and autonomy. The task significance variable loads negatively upon Factor 1. Three variables load positively on Factor 2 (task identity). They are: feedback, task significance, and task variety.

These two factors were rotated to identify alternative ways to reproduce the original data matrix for the principal factors while relaxing some requirements that were in place for the initial extraction (i.e., the orthogonal criteria).

Accordingly, these data were subjected to both orthogonal and non-orthogonal rotational techniques. The orthogonal method used was varimax rotation. Varimax rotation produced the rotated factor matrix reproduced in Table 13. This solution maximizes the variance across all factors in the matrix. All variables loaded positively on

TABLE 10

SORTED FACTOR MATRIX FOR NON-SUPERVISORY SUBJECTS (N = 63)

VARIABLE	FACTOR 1
SKILL VARIETY	.757
TASK IDENTITY	.726
TASK SIGNIFICANCE	.725
AUTONOMY	.701
FEEDBACK	.625

TABLE 11

INITIAL EIGNEVALUES AND PERCENTAGES OF VARIANCE FOR SUPERVISORY SUBJECTS (N = 21)

VARIABLE	FACTOR	EIGENVALUE	PCT. OF VARIANCE	CUM/ PCT.
SKILL VARIETY	1	2.466*	49.3	49.3
TASK IDENTITY	2	1.340*	26.8	76.1
TASK SIGNIFICANCE	3	.621	12.4	88.6
AUTONOMY	4	.326	6.5	95.1
FEEDBACK	5	.247	4.9	100.0

* = p less than or equal to .05

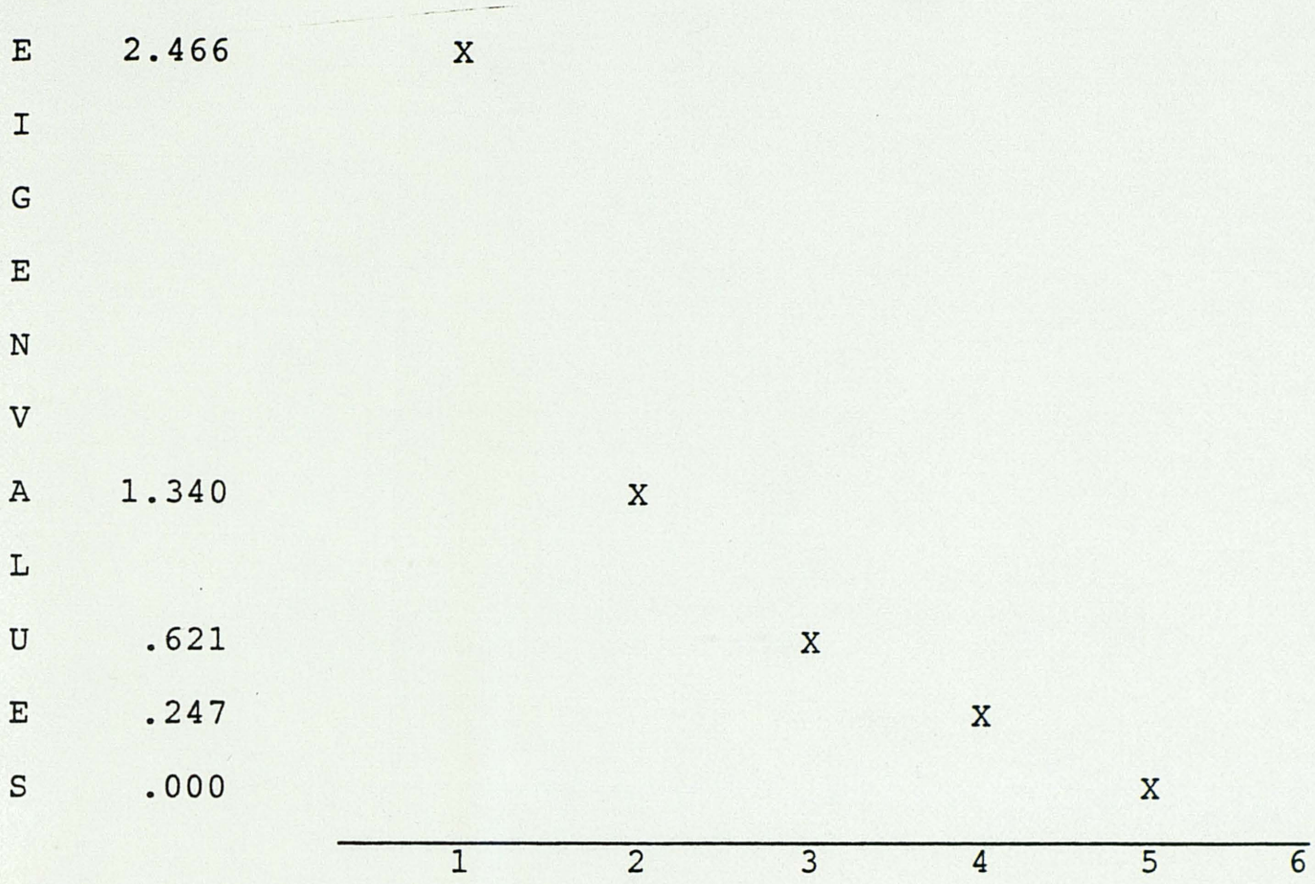

Figure 3. Scree Plot of Variables in Rotated Factor Space for Supervisory Subjects.

TABLE 12

SORTED FACTOR MATRIX FOR SUPERVISORY SUBJECTS (N = 21)

	FACTOR 1	FACTOR 2
FEEDBACK	.893	.132
TASK IDENTITY	.856	- .316
AUTONOMY	.795	- .025
TASK SIGNIFICANCE	- .194	.883
SKILL VARIETY	.516	.666

TABLE 13

ROTATED FACTOR MATRIX FOR SUPERVISORS (N = 21)
VARIMAX

	FACTOR 1	FACTOR 2
FEEDBACK	.882	.193
TASK INDETITY	.876	- .256
AUTONOMY	.795	.030
TASK SIGNIFICANCE	- .254	.867
SKILL VARIETY	.469	.700

Factor 1 except for task significance. All variables loaded positively on Factor 2. The results of the varimax rotation were very similar to that of the initial sorted factor matrix. This suggests that the initial extraction was parsimonious and was probably most accurate.

The oblique rotation was conducted next. Oblique rotation generates two separate matrices which are reproduced in Tables 14 and 15. The pattern matrix (Table 14) delineates the clustering of variables. The square of each coefficient in the pattern matrix represents the direct contribution of a given factor to the variance of a variable. The pattern observed here was also similar to the varimax rotation results and to the initial factor matrix, i.e., Factor 1 is positively loaded by feedback, task identity, skill variety, and autonomy while Factor 2 loads positively on task significance and skill variety. The structure matrix (Table 15), is composed of correlation coefficients. Therefore, the correlation between any variable and a factor would be the square of the coefficient in the corresponding cell.

None of the preceding analyses provided any support for the four-trait model hypothesis.

TABLE 14

ROTATED PATTERN MATRIX FOR SUPERVISORS (N = 21)
OBLIQUE

	FACTOR 1	FACTOR 2
FEEDBACK	.881	.165
TASK IDENTITY	.878	- .284
AUTONOMY	.795	.004
TASK SIGNIFICANCE	- .258	.876
SKILL VARIETY	.467	.685

TABLE 15

ROTATED STRUCTURE MATRIX FOR SUPERVISORS (N = 21)
OBLIQUE

	FACTOR 1	FACTOR 2
FEEDBACK	.887	.197
TASK IDENTITY	.867	- .252
AUTONOMY	.795	.033
TASK SIGNIFICANCE	- .226	.866
SKILL VARIETY	.492	.702

Hypothesis Two

This hypothesis stated that a pattern would emerge from tests of significance of group means such that supervisor ratings of jobs (on five dimensions) would be significantly different from those of the job incumbents. This non-directional hypothesis was tested with a two-tailed test. For purposes of this analyses, the statistical significant criterion was set at p less than or equal to .05.

First, mean scores of all supervisors were compared with those of all subordinates on each job dimension and on MPS scores. The results, summarized in Table 16, indicate no support for this hypothesis. In no case did the two-tailed probability level for the F-value fall below .05.

Groups' mean scores were also compared within job families (as defined by Hackman and Oldham). For jobs in the clerical group (n of jobs = 4) only one of the differences between group means was significantly different. As shown in Table 17, the mean scores of the supervisors were significantly higher on the task identity dimension (F=53.61).

In the case of the service jobs, (custodial workers, policemen, library assistants, etc.) task identity was again the only dimension on which supervisor scores were

TABLE 16

F-TEST OF VARIABLE MEANS FOR SUPERVISORY AND NON-SUPERVISORY SUBJECTS IN ALL JOBS

VARIABLE		NUMBER OF CASES	MEAN	S.D.	F
SKILL VARIETY	GRP 1	63	4.840	.89	1.27
	GRP 2	21	4.886	.79	
TASK IDENTITY	GRP 1	63	5.070	1.06	1.72
	GRP 2	21	4.938	1.39	
TASK SIGNIFICANCE	GRP 1	63	5.298	1.07	1.33
	GRP 2	21	5.181	1.23	
AUTONOMY	GRP 1	63	5.094	.87	1.18
	GRP 2	21	4.662	.95	
FEEDBACK	GRP 1	63	4.894	.90	1.07
	GRP 2	21	4.981	.93	
MPS	GRP 1	63	130.557	.42	1.16
	GRP 2	21	124.752	.06	

Note: GRP 1 = Non-Supervisory Subjects
GRP 2 = Supervisory Subjects
MPS = Motivating Potential Score
* = p is less than .05

TABLE 17

F-TEST OF VARIABLE MEANS FOR SUPERVISORY VERSUS NON-SUPERVISORY SUBJECTS (CLERICAL JOBS)

VARIABLE		NUMBER OF CASES	MEAN	S.D.	F
SKILL VARIETY	GRP 1	12	5.208	.735	1.49
	GRP 2	4	4.800	.59	
TASK IDENTITY	GRP 1	12	5.558	1.10	53.61
	GRP 2	4	6.175	.15	
TASK SIGNIFICANCE	GRP 1	12	5.842	1.17	1.93
	GRP 2	4	4.425	1.63	
AUTONOMY	GRP 1	12	5.083	1.08	10.89
	GRP 2	4	4.700	.33	
FEEDBACK	GRP 1	12	5.058	1.02	1.33
	GRP 2	4	5.025	1.17	
MPS	GRP 1	12	148.225	65.52	3.05
	GRP 2	4	134.525	35.81	

Note: GRP 1 = Non-Supervisory Subjects
GRP 2 = Supervisory Subjects
MPS = Motivating Potential Score
* = p is less than .05

significantly higher than those of their subordinates (F=.263). Table 18 summarizes these findings.

In the data processing group (composed of computer programmer/analysts), there was no significant difference among subject groups on any of their mean variable scores (see Table 19).

For the positions in the machine trades job family however, the findings were different and were also in a totally unanticipated direction. The mean scores of the subordinates in these job families were found to be significantly higher than those of the supervisors on the task identity and autonomy dimensions. This is to say, job incumbents rated their jobs higher (on the presence of these two dimensions) than did their superiors.

The preceding analyses provide no support for Hypothesis Two. However, they do suggest that the perceptions of job incumbents regarding the presence of the focal dimensions is, to some degree, influenced by the job family into which these positions fall.

Hypothesis Three

This hypothesis stated that JDS mean MPS scores by family would be significantly lower than MPS normative scores for those job families. As Table 20 indicates, there

TABLE 18

F-TEST OF VARIABLE MEANS FOR SUPERVISORY VERSUS NON-SUPERVISORY SUBJECTS (SERVICE JOBS)

VARIABLE		NUMBER OF CASES	MEAN	S.D.	F
SKILL VARIETY	GRP 1	33	4.482	.90	1.07
	GRP 2	11	4.936	.93	
TASK IDENTITY	GRP 1	33	4.685	.88	2.63
	GRP 2	11	5.482	1.43	
TASK SIGNIFICANCE	GRP 1	33	4.876	1.07	1.29
	GRP 2	11	5.482	1.21	
AUTONOMY	GRP 1	33	5.070	.88	1.47
	GRP 2	11	4.464	1.07	
FEEDBACK	GRP 1	33	4.727	.99	1.06
	GRP 2	11	4.891	.96	
MPS	GRP 1	33	117.41	47.31	1.58
	GRP 2	11	119.10	59.44	

Note: GRP 1 = Non-Supervisory Subjects
GRP 2 = Supervisory Subjects
MPS = Motivating Potential Score
* = p is less than .05

TABLE 19

F-TEST OF VARIABLE MEANS FOR SUPERVISORY VERSUS NON-SUPERVISORY SUBJECTS (DATA PROCESSING JOBS)

VARIABLE		NUMBER OF CASES	MEAN	S.D.	F
SKILL VARIETY	GRP 1	9	5.178	.71	1.44
	GRP 2	3	5.200	.85	
TASK IDENTITY	GRP 1	9	5.156	1.51	1.51
	GRP 2	3	4.433	1.86	
TASK SIGNIFICANCE	GRP 1	9	5.711	.58	2.17
	GRP 2	3	5.667	.85	
AUTONOMY	GRP 1	9	4.956	.96	1.12
	GRP 2	3	4.900	1.02	
FEEDBACK	GRP 1	9	5.122	.59	3.16
	GRP 2	3	5.000	1.04	
MPS	GRP 1	9	136.833	38.58	2.71
	GRP 2	3	131.433	63.53	

Note: GRP 1 = Non-Supervisory Subjects
GRP 2 = Supervisory Subjects
MPS = Motivating Potential Score
* = p is less than .05

TABLE 20

JDS MPS MEANS FOR THREE JOB FAMILIES
COMPARED TO NORMAL MPS SCORES

N	JOB FAMILY	NORM MPS MEAN	OBSERVED MPS MEAN	PCT
4	Clerical	106	154.2	+45.5%
11	Service	152	131.1	-15.9%
3	Processing	105	136.8	+30.3%
3	Machine Trades	136	148.9	+9.49%

is no support in the current data for this hypothesis. When the data were broken into job families, the following pattern emerged. Mean observed MPS scores for the service job family were found to be twenty percent below mean norm MPS scores. In all other job families (i.e., clerical, processing, and machine trades) mean observed MPS scores exceeded the norm MPS score. These data were tested for significance by applying the Wilcoxon Signed Ranks Test. Using a directional alpha level of p less than or equal to.05, the results in Table 20 where the service family MPS scores were below the norm was to be insignificant. Accordingly, no support was found for Hypothesis Three.

DISCUSSION

The results of this study have not supported the three proposed hypotheses. Hypothesis One suggested that four significant traits (task variety, task identity, autonomy, and feedback) would be found to account for a majority of the variance in data collected from administration of the JDS. The task significance trait has been previously reported to be associated with large residual correlations and has also been consistently shown to have low agreement among raters.

The findings of this factor analysis study suggest that the number of significant factors in the job characteristics model is dependent upon whether the model is applied to supervisors or to job incumbents. In the current study, this conclusion is supported by the outcome of the factor analysis, which indicated that supervisors differentiated between two significant job families while job incumbents observed only one significant factor. Further, as indicated in the Results section, the skill variety dimension was the most significant factor extracted for both supervisory and non-supervisory subjects. As the Introduction section reported, skill variety refers to the degree to which a job

requires the worker to perform activities that challenge his/her skills and abilities. For non-supervisory subjects, the extraction of the skill variety factor suggests, for the jobs under consideration, that incumbents indicate that the chance to use a variety of their skills is the factor which is most likely to motivate them and that the other job dimensions are only a subset of the skill variety factor which is dominant. This finding provides support for the idea of allowing employees to work cooperatively to use their skills, as they are needed, to the advantage of the group. The quality circle concept in which employees get together to solve a problem by bringing to bear their varied skills and experiences is an extension of the findings of the factor analytic section of this study. That is, employees wish to be able to apply their skills to solving work-related problems instead of only being able to function to a limited degree of their potential.

It is worth noting that the feedback, autonomy, and task significance dimensions were left out of the model by both supervisory and incumbent subjects. The UCF organizational system, at other than administrative and professional levels, is characterized by the assignment of specific tasks and responsibilities to each employee. Employees receive specific instructions from supervisors for all work which they perform and are seldom given the

opportunity to use skills other than those called for in their job descriptions.

Another organizational characteristic which likely influenced the study's findings is that specific job descriptions are prepared for each non-instructional position in the university. These position descriptions not only specify exactly what duties an incumbent should perform, but they are also used to determine the job title (and thereby the pay grade) which should be attached to a position. Employees, therefore, do not normally perform duties beyond those specifically described. This reality is likely to have suppressed the task significance, autonomy, and feedback traits. Task significance (the degree to which the job has a substantial and perceivable impact on the lives of people) is not likely to be of particular interest to employees in an organization where job security is normally guaranteed and where salary increases are across-the-board, with no relation to performance. The autonomy dimension (the degree to which a job gives the worker freedom, independence, and discretion in scheduling work and in determining how it should be done) was probably found to be insignificant because the majority of these positions were in job families where specific instructions regarding expected performance are given and where there are specific procedures for performing the job. This

consideration may also have had some impact on the feedback dimension since, in jobs where duties are routine and repetitive and performance is easily observed, the need for ongoing feedback from the supervisor is minimized.

Apart from the preceding inferential rationale for the observed results, an examination of the statistical basis for the results is warranted. The most likely statistical explanation is the method which was used for the extraction of the principal factors. In this study, principal-components analysis was utilized. Under this method, the principal factors are extracted in such a way as to meet the criterion that they minimally correlated with each other. The less significant factors are generally dropped and a truncated solution may result.

It must however be indicated that in all cases, an aplha level of p less than or equal to .05 was used. This is a liberal criterion which would have increased the likelihood of finding several significant factors. The fact that no more factors were extracts indicates that similar results would have been found if a more stringent alpha level criterion had been set.

The results of the testing of Hypothesis Two suggest (much as Hackman and Oldham, 1974, do), that either the JDS or the JRF will provide an accurate assessment of the motivating potential of jobs. However, the results of the

testing of Hypothesis One lend credence to the notion that supervisors may be more likely to differentiate subtleties in job characteristics. As a caveat, however, when supervisory and subordinates do differ in their assessments of the presence of a particular job dimension it may be that supervisors may not be accurately aware of the feelings which incumbents have about their jobs. There is always the likelihood as well, that supervisors' ratings may be higher than those of their subordinates as a means to make the jobs which they supervise seem more motivating than they really are. A motivating job is likely to reflect positively on its supervisor. However, the current study indicates that it may be concluded that the supervisors' ratings of the motivating potential of a job will usually be similar to ratings provided by job incumbents.

The study results also suggest that, for employees of the University of Central Florida, motivation may not be influenced by those job characteristics which the researcher had anticipated. For example, Hypothesis Three, which presupposed that incumbents' MPS scores would be lower than the norm for their job family, was not supported. This hypothesis was based on knowledge about the nature of most jobs at the University of Central Florida. Specifically, the researcher anticipated that employees would dislike the lack of decision-making responsibility and the few

opportunities for creativity and making decisions about when and how a task would be done. In contrast, MPS means for three of the four job families sampled in the study were above the norm. It may be concluded that incumbent subjects would like to use more (or develop new) skills but that the lack of opportunity to do so has not had a negative impact upon the potential of their jobs to motivate them. Conversely, the results may be indicating that the job incumbents sampled do not have a high need for motivation and are, therefore, satisfied with the existing levels of skill variety present in their jobs.

APPENDIX A

STATEMENT OF PURPOSE

You are being asked to participate in a research effort which is a requirement for my Master's degree in Industrial/ Organizational Psychology here at the University of Central Florida. I am conducting this study in an effort to improve an existing model which is used to measure the motivating potential of jobs.

The responses you provide on all sections of the questionnaire will be held in strict confidence by the researcher. No analysis of this data will ever be used officially or unofficially by the University of Central Florida nor by the UCF Personnel Department. All responses will be used collectively and anonymously in a statistical analysis. Responses collected as a part of this study will be used solely in this research effort.

You may obtain the results of this study, in summary form, when they are available later this summer. Please write your name and UCF mailing address in the spaces below if you choose to have this information.

NAME_____

UCF ADDRESS_____

_____

Specific instructions are provided on the first page of the questionnaire. Upon completing the questionnaire, seal your response in an envelope and return it to me at the following address. PLEASE DO NOT GIVE THE COMPLETED QUESTIONNAIRE TO ANYONE ELSE.

Gena Cox-Jones
Personnel Services Department
AD 230.

I would like to have all the completed questionnaires returned to me by Friday, May 8, 1987. If you are too busy to complete the instrument by that time, please do so at your convenience and return it to me as soon as you can.

REMEMBER, YOUR PARTICIPATION IN THIS EFFORT IS STRICTLY VOLUNTARY. YOU DO NOT HAVE TO COMPLETE THE QUESTIONNAIRE IF YOU DO NOT WISH TO DO SO!

THANK YOU!

APPENDIX B

JOB DIAGNOSTIC SURVEY

This questionnaire was developed as part of a Yale University study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 25 minutes to complete the entire questionnaire. Please move through it quickly.

The questions are designed to obtain *your* perceptions of your job and *your* reactions to it.

There are no trick questions. Your individual answers will be kept completely confidential. Please answer each item as honestly and frankly as possible.

Thank you for your cooperation.

SECTION ONE

This part of the questionnaire asks you to describe your job, as *objectively* as you can.

Please do *not* use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does your job require you to work with mechanical equipment?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- (6) ------- 7

Very little: the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much: the job requires almost constant work with mechanical equipment.

You are to *circle* the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time—but also requires some paperwork—you might circle the number six, as was done in the example above.

If you do not understand these instructions, please ask for assistance. If you do understand them, turn the page and begin.

1. To what extent does your job require you to *work closely with other people* (either "clients," or people in related jobs in your own organization)?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little: dealing with other people is not at all necessary in doing the job.	Moderately: some dealing with others is necessary.	Very much: dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much *autonomy* is there in your job? That is, to what extent does your job permit you to decide *on your own* how to go about doing the work?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little: the job gives me almost no personal "say" about how and when the work is done.	Moderate autonomy: many things are standardized and not under my control, but I can make some decisions about the work.	Very much: the job gives me almost complete responsibility for deciding how and when the work is done.

3. To what extent does your job involve doing a *"whole" and identifiable piece of work*? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small *part* of the overall piece of work, which is finished by other people or by automatic machines?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.	My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.	My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

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4. How much *variety* is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little: the job requires me to do the same routine things over and over again.	Moderate variety.	Very much: the job requires me to do many different things, using a number of different skills and talents.

5. In general, how *significant or important* is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Not very significant: the outcomes of my work are *not* likely to have important effects on other people.	Moderately significant.	Highly significant: the outcomes of my work can affect other people in very important ways.

6. To what extent do *managers or co-workers* let you know how well you are doing on your job?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little: people almost never let me know how well I am doing.	Moderately: sometimes people may give me "feedback"; other times they may not.	Very much: managers or co-workers provide me with almost constant "feedback" about how well I am doing.

7. To what extent does *doing the job itself* provide you with information about your work performance? That is, does the actual *work itself* provide clues about how well you are doing—aside from any "feedback" co-workers or supervisors may provide?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Very little: the job itself is set up so I could work forever without finding out how well I am doing.

Moderately: sometimes doing the job provides "feedback" to me; sometimes it does not.

Very much: the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

SECTION TWO

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an *accurate* or an *inaccurate* description of *your* job.

Once again, please try to be as objective as you can in deciding how accurately each statement describes your job—regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your job?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

_____ 1. The job requires me to use a number of complex or high-level skills.

_____ 2. The job requires a lot of cooperative work with other people.

_____ 3. The job is arranged so that I do *not* have the chance to do an entire piece of work from beginning to end.

_____ 4. Just doing the work required by the job provides many chances for me to figure out how well I am doing.

_____ 5. The job is quite simple and repetitive.

_____ 6. The job can be done adequately by a person working alone—without talking or checking with other people.

_____ 7. The supervisors and co-workers on this job almost *never* give me any "feedback" about how well I am doing in my work.

_____ 8. This job is one where a lot of other people can be affected by how well the work gets done.

_____ 9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

_____ 10. Supervisors often let me know how well they think I am performing the job.

_____ 11. The job provides me the chance to completely finish the pieces of work I begin.

_____ 12. The job itself provides very few clues about whether or not I am performing well.

_____ 13. The job gives me considerable opportunity for independence and freedom in how I do the work.

_____ 14. The job itself is *not* very significant or important in the broader scheme of things.

SECTION THREE

Now please indicate how *you personally feel about your job.*

Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal *feelings* about your job by marking how much you agree with each of the statements.

Write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

_____ 1. It's hard, on this job, for me to care very much about whether or not the work gets done right.

_____ 2. My opinion of myself goes up when I do this job well.

_____ 3. Generally speaking, I am very satisfied with this job.

_____ 4. Most of the things I have to do on this job seem useless or trivial.

_____ 5. I usually know whether or not my work is satisfactory on this job.

_____ 6. I feel a great sense of personal satisfaction when I do this job well.

_____ 7. The work I do on this job is very meaningful to me.

_____ 8. I feel a very high degree of *personal* responsibility for the work I do on this job.

_____ 9. I frequently think of quitting this job.

_____10. I feel bad and unhappy when I discover that I have performed poorly on this job.

_____11. I often have trouble figuring out whether I'm doing well or poorly on this job.

_____12. I feel I should personally take the credit or blame for the results of my work on this job.

_____13. I am generally satisfied with the kind of work I do in this job.

_____14. My own feelings generally are *not* affected much one way or the other by how well I do on this job.

_____15. Whether or not this job gets done right is clearly *my* responsibility.

SECTION FOUR

Now please indicate how *satisfied* you are with each aspect of your job listed below. Once again, write the appropriate number in the blank beside each statement.

How satisfied are you with this aspect of your job?

1	2	3	4	5	6	7
Extremely Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Extremely Satisfied

_____ 1. The amount of job security I have.

_____ 2. The amount of pay and fringe benefits I receive.

_____ 3. The amount of personal growth and development I get in doing my job.

_____ 4. The people I talk to and work with on my job.

_____ 5. The degree of respect and fair treatment I receive from my boss.

_____ 6. The feeling of worthwhile accomplishment I get from doing my job.

_____ 7. The chance to get to know other people while on the job.

_____ 8. The amount of support and guidance I receive from my supervisor.

_____ 9. The degree to which I am fairly paid for what I contribute to this organization.

_____10. The amount of independent thought and action I can exercise in my job.

_____11. How secure things look for me in the future in this organization.

_____12. The chance to help other people while at work.

_____13. The amount of challenge in my job.

_____14. The overall quality of the supervision I receive in my work.

SECTION FIVE

Now please think of the *other people* in your organization who hold the same job you do. If no one has exactly the same job as you, think of the job which is most similar to yours.

Please think about how accurately each of the statements describes the feelings of those people about the job.

It is quite all right if your answers here are different from when you described your *own* reactions to the job. Often different people feel quite differently about the same job.

Once again, write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

_____ 1. Most people on this job feel a great sense of personal satisfaction when they do the job well.

_____ 2. Most people on this job are very satisfied with the job.

_____ 3. Most people on this job feel that the work is useless or trivial.

_____ 4. Most people on this job feel a great deal of personal responsibility for the work they do.

_____ 5. Most people on this job have a pretty good idea of how well they are performing their work.

_____ 6. Most people on this job find the work very meaningful.

_____ 7. Most people on this job feel that whether or not the job gets done right is clearly their own responsibility.

_____ 8. People on this job often think of quitting.

_____ 9. Most people on this job feel bad or unhappy when they find that they have performed the work poorly.

_____10. Most people on this job have trouble figuring out whether they are doing a good or a bad job.

SECTION SIX

Listed below are a number of characteristics which could be present on any job. People differ about how much they would like to have each one present in their own jobs. We are interested in learning *how much you personally would like* to have each one present in your job.

Using the scale below, please indicate the *degree* to which you *would like* to have each characteristic present in your job.

NOTE: The numbers on this scale are different from those used in previous scales.

4	5	6	7	8	9	10
Would like having this only a moderate amount (or less)			Would like having this very much			Would like having this *extremely* much

___ _ 1. High respect and fair treatment from my supervisor.

___ _ 2. Stimulating and challenging work.

___ _ 3. Chances to exercise independent thought and action in my job.

___ _ 4. Great job security.

___ _ 5. Very friendly co-workers.

___ _ 6. Opportunities to learn new things from my work.

___ _ 7. High salary and good fringe benefits.

___ _ 8. Opportunities to be creative and imaginative in my work.

___ _ 9. Quick promotions.

___ 10. Opportunities for personal growth and development in my job.

___ 11. A sense of worthwhile accomplishment in my work.

SECTION SEVEN

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to *you*.

For each question, two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer—if you had to make a choice between them

In answering each question, assume that everything else about the jobs is the same. Pay attention only to the characteristics actually listed.

Two examples are given below.

JOB A				*JOB B*
A job requiring work with mechanical equipment most of the day				A job requiring work with other people most of the day
1	2	(3)	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you like working with people and working with equipment equally well, you would circle the number 3, as has been done in the example.

Here is another example. This one asks for a harder choice—between two jobs which both have some undesirable features.

JOB A				*JOB B*
A job requiring you to expose yourself to considerable physical danger.				A job located 200 miles from your home and family.
1	(2)	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you would slightly prefer risking physical danger to working far from your home, you would circle number 2, as has been done in the example.

Please ask for assistance if you do not understand exactly how to do these questions.

JOB A				*JOB B*
1. A job where the pay is very good.				A job where there is considerable opportunity to be creative and innovative.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

JOB A *JOB B*

2. A job where you are often required to make important decisions. A job with many pleasant people to work with.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

3. A job in which greater responsibility is given to those who do the best work. A job in which greater responsibility is given to loyal employees who have the most seniority.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

4. A job in an organization which is in financial trouble—and might have to close down within the year. A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

JOB A *JOB B*

5. A very routine job. A job where your co-workers are not very friendly.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

6. A job with a supervisor who is often very critical of you and your work in front of other people. A job which prevents you from using a number of skills that you worked hard to develop.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

7. A job with a supervisor who respects you and treats you fairly. A job which provides constant opportunities for you to learn new and interesting things.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A | Slightly Prefer A | Neutral | Slightly Prefer B | Strongly Prefer B

JOB A *JOB B*

8. A job where there is a real chance you could be laid off. / A job with very little chance to do challenging work.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

9. A job in which there is a real chance for you to develop new skills and advance in the organization. / A job which provides lots of vacation time and an excellent fringe benefit package.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

10. A job with little freedom and independence to do your work in the way you think best. / A job where the working conditions are poor.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

JOB A *JOB B*

11. A job with very satisfying teamwork. / A job which allows you to use your skills and abilities to the fullest extent.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

12. A job which offers little or no challenge. / A job which requires you to be completely isolated from co-workers.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

SECTION EIGHT

Biographical Background

1. Sex: Male_____ Female_____

2. Age (check one):

_____under 20 _____40-49

_____20-29 _____50-59

_____30-39 _____60 or over

3. Education (check one):

_____Grade School

_____Some High School

_____High School Degree

_____Some Business College or Technical School Experience

_____Some College Experience (other than business or technical school)

_____Business College or Technical School Degree

_____College Degree

_____Master's or Higher Degree

4. What is your brief job title? _____

5. What is your ethnic background? Please check the appropriate box:

( ) Caucasian ( ) Black

( ) Hispanic ( ) Other

APPENDIX C

JOB RATING FORM

This questionnaire was developed as part of a Yale University study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs.

You are asked to rate the characteristics of the following job:

_____

Please keep in mind that the questions refer to the job listed above, and *not* to your own job.

On the following pages, you will find several different kinds of questions about the job listed above. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 10 minutes to complete the entire questionnaire. Please move through it quickly.

SECTION ONE

This part of the questionnaire asks you to describe the job listed above as *objectively* as you can. Try to make your description as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does the job require a person to work with mechanical equipment?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- (6) ------- 7

Very little: the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much: the job requires almost constant work with mechanical equipment.

You are to *circle* the number which is the most accurate description of the job you are rating.

If, for example, the job requires a person to work with mechanical equipment a good deal of the time—but also requires some paperwork—you might circle the number six, as was done in the example above.

1. To what extent does the job require a person to *work closely with other people* (either "clients," or people in related jobs in the organization)?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little: dealing with other people is not at all necessary in doing the job.

Moderately: some dealing with others is necessary.

Very much: dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much *autonomy* is there in the job? That is, to what extent does the job permit a person to decide *on his or her own* how to go about doing the work?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little; the job gives a person almost no personal "say" about how and when the work is done.	Moderate autonomy; many things are standardized and not under the control of the person, but he or she can make some decisions about the work.	Very much; the job gives the person almost complete responsibility for deciding how and when the work is done.

3. To what extent does the job involve doing a *"whole" and identifiable piece of work*? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small *part* of the overall piece of work, which is finished by other people or by automatic machines?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

The job is only a tiny part of the overall piece of work; the results of the person's activities cannot be seen in the final product or service.	The job is a moderate-sized "chunk" of the overall piece of work; the person's own contribution can be seen in the final outcome.	The job involves doing the whole piece of work, from start to finish; the results of the person's activities are easily seen in the final product or service.

4. How much *variety* is there in the job? That is, to what extent does the job require a person to do many different things at work, using a variety of his or her skills and talents?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little; the job requires the person to do the same routine things over and over again.	Moderate variety.	Very much; the job requires the person to do many different things, using a number of different skills and talents.

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5. In general, how *significant or important* is the job? That is, are the results of the person's work likely to significantly affect the lives or well-being of other people?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Not at all significant; the outcomes of the work are *not* likely to affect anyone in any important way.	Moderately significant.	Highly significant; the outcomes of the work can affect other people in very important ways.

6. To what extent do *managers or co-workers* let the person know how well he or she is doing on the job?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little; people almost never let the person know how well he or she is doing.	Moderately; sometimes people may give the person "feedback"; other times they may not.	Very much; managers or co-workers provide the person with almost constant "feedback" about how well he or she is doing.

7. To what extent does *doing the job itself* provide the person with information about his or her work performance? That is, does the actual *work itself* provide clues about how well the person is doing—aside from any "feedback" co-workers or supervisors may provide?

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7

Very little; the job itself is set up so a person could work forever without finding out how well he or she is doing.	Moderately; sometimes doing the job provides "feedback" to the person; sometimes it does not.	Very much; the job is set up so that a person gets almost constant "feedback" as he or she works about how well he or she is doing.

SECTION TWO

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an *accurate* or an *inaccurate* description of the job you are rating.

Once again, please try to be as *objective* as you can in deciding how accurately each statement describes the job—regardless of your own *feelings* about that job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing the job you are rating?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

_____ 1. The job requires a person to use a number of complex or sophisticated skills.

_____ 2. The job requires a lot of cooperative work with other people.

_____ 3. The job is arranged so that a person does *not* have the chance to do an entire piece of work from beginning to end.

_____ 4. Just doing the work required by the job provides many chances for a person to figure out how well he or she is doing.

_____ 5. The job is quite simple and repetitive.

_____ 6. The job can be done adequately by a person working alone—without talking or checking with other people.

_____ 7. The supervisors and co-workers on this job almost *never* give a person any "feedback" about how well he or she is doing the work.

_____ 8. This job is one where a lot of other people can be affected by how well the work gets done.

_____ 9. The job denies a person any chance to use his or her personal initiative or discretion in carrying out the work.

_____10. Supervisors often let the person know how well they think he or she is performing the job.

_____11. The job provides a person with the chance to finish completely any work he or she starts.

_____12. The job itself provides very few clues about whether or not the person is performing well.

_____13. The job gives a person considerable opportunity for independence and freedom in how he or she does the work.

_____14. The job itself is *not* very significant or important in the broader scheme of things.

GENERAL INFORMATION

1. How many persons do you supervise?

2. What is your own job title? _____

3. What is your age? (Check one)

_____under 20	_____40-49
_____20-29	_____50-59
_____30-39	_____60 or over

4. How long have you been in your present position? (Check one)

_____0-½ yr.	_____3-5 yrs.
_____½-1 yr.	_____5-10 yrs.
_____1-2 yrs.	_____10 or more yrs.

5. What is your ethnic background? Please check the appropriate box:

( ) Caucasian
( ) Black
( ) Hispanic
( ) Other

APPENDIX D

JOB DIAGNOSTIC SURVEY NORMATIVE DATA
FOR SEVERAL JOB FAMILIES

	PROFESSIONAL OR TECHNICAL		CLERICAL		SERVICE		MACHINE TRADES	
VARIABLE	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
SKILL VARIETY	5.4	1.0	4.0	1.3	5.0	1.4	5.1	1.2
TASK IDENTITY	5.1	1.2	4.7	1.2	4.7	1.2	4.9	1.3
TASK SIGNIFICANCE	5.6	.9	5.3	1.1	5.7	1.0	5.6	1.2
AUTONOMY	5.4	1.0	4.5	1.2	5.0	1.2	4.9	1.3
FEEDBACK FROM JOB	5.1	1.1	4.6	1.3	5.1	1.2	4.9	1.2
FEEDBACK FROM AGENTS	4.2	1.4	4.0	1.4	3.8	1.6	3.8	1.4
DEALING WITH OTHERS	5.8	.9	5.2	1.1	6.0	1.0	5.3	1.0
MPS	154.0	55.0	106.0	59.0	152.0	70.0	136.0	64.0

NOTE: MPS = Motivating Potential Score

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